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***Membership**: Annual Dues $25 per calendar year (January 1 to December 31).*

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***Honorary Life Members**: Terry Kennedy, Doug Kennedy, Inge Poot, Peter Poot, Joe O'Regan, Diane Ryley, Wayne Hingston.*

Paphiopedilum Liberty Taiwan 'Wilson's Choice' This plant was recommended for an Award of Merit at the TAOA show this spring. US authorities consider this an illegal plant under CITES regulations because of the hangianum parent. The American Orchid Society was therefore unable to approve the award. Photo PP

Meeting Program Sunday, **August 7, SOOS Summerfest, Toronto Centre judging and SOOS Orchidfest, Toronto Botanical Garden,**

Judging 10 am,

Bring your plants for judging,plant registration 9am-10am. See the judges at work, learn how it is done and what to look for.

Pot luck lunch 12 noon, please bring a dish to share. Due to changes of the rules at the TBG we cannot provide the usual hot dogs and hamburgers. There will be drinks.

Program 1 pm, Andrea Niessen from Columbia on Maxillarias and Sam Tsui from Chicago on multifloral Paphiopedilums. They will bring some plants for sale.

Fellow orchid aficionados:

The Tour of Orchid Growers took place on June 11th and 12th. There were eight different growers to visit. Most of the hosts were pleased with the response to their open house and were willing to participate again. I hope that all of you who took the opportunity to visit some of the society's stellar growers were also pleased with the experience.

Orchidfest is fast approaching. Make sure that August 7th is marked on your calendar. Please remember that this event will now, with exception of beverages, be totally potluck. All the food, main courses, salads and desserts, will be brought in and shared by our members. What we bring to share, we will all eat. Help in the kitchen to organize the food is needed. If you can help out let me know at yvonneschreiber68@gmail.com, or phone me at 905-473-3405. The "kitchen crew" will convene at 11:00 a.m.

A reminder about the changes that will be made to the membership fees. Beginning in September 2011, the cost for a membership will increase to $30.00. Effective immediately, for all new members opting to receive the newsletter via regular post, an additional charge of $15.00 will be added to their membership fee. A current member wishing to change from e-mail to regular post for receipt of the newsletter will also be assessed this additional charge. Our monthly newsletter is currently available via e-mail or regular post. Almost half of our members have chosen not to receive the e-mail version, and the cost of mailing the newsletter to these people uses up most of all of the membership fees collected. If at all possible, we are urging all current members, who have not provided us with an e-mail address to receive the newsletter, to do so.

This is your orchid society. What are your hopes, ideas, problems or complaints about the society? What are we doing well? What could we be doing? We can always use fresh ideas.

Are you willing to contribute? Get your feet wet by joining the executive – there are jobs looking for people. The position of vice president is one spot that needs to be filled. The election for the 2012-2013 executive will take place at the December 4th meeting. Talk to me at a meeting; e-mail me at yvonneschreiber68@gmail.com, or phone me at 905-473-3405.

I will not be at Orchidfest this year. My daughter and her husband are expecting their second child on August 10th and I will be heading for B.C. on August 1st to lend a hand. Enjoy your summer and we will see each other in September. Yvonne Schreiber

Welcome New Member

Aleli Narvaez. Aleli grows her orchids on a windowsill and under lights. She learned about us from a friend.

Fall New Comers' Meetings

Wayne Hingston (905-686-5697) will once again present his excellent series on the culture of the most popular types of hobby orchids. These sessions are for members who have just started in orchids and will be presented at the Toronto Botanical Garden Board Room on the following **Tuesday** evenings at 7 pm:

Sept. 27, Oct. 18, Nov. 22, Dec. 13, and Jan. 17 (2012).

Coming Events *2011*

July

16, Montréal Centre – Jardin botanique de Montréal

August

7, Toronto Centre judging and SOOS Orchidfest, Toronto Botanical Garden, Judging 10 am, Program 1 pm, Andrea Niessen from Columbia on Maxillarias and Sam Tsui from Chicago on Paphs.

20, Montréal Centre – Jardin botanique de Montréal

SEPTEMBER

3, Toronto Centre, Toronto Botanical Garden, Judges training 10 am, Judging 1 pm.

4, **SOOS meeting** Toronto Botanical Garden, sales 12 noon, program 1 pm

17, Montréal Centre – Jardin botanique de Montréal

24-25, Central Ontario Orchid Society Show, Toronto Centre, October judging

AOS Judging Results. Please note, all of these awards are provisional until published by the American Orchid Society

Toronto Centre Judging June 4

Phalaenopsis Princess Kaiulani 'Wilson's Choice' AM-AOS 81 points, Wilson Ng.

Promenaea Ben Berliner 'Lemon Lime', AM-AOS 81 points , Mario & Conni Ferrusi

Promenaea Conni 'My Girl', HCC-AOS 77points, Mario & Conni Ferrusi
Oncidium crispum 'Phillip Rhys David', CCM-AOS 82 points, AM-AOS 84 points, Mario & Conni Ferrusi

Bulbophylum tortuosum, CBR-AOS, CCM-AOS 83 points, Cloud's Orchids

Oncidium baueri 'Ellen' AM-AOS 83 points John Spears

Toronto Centre Judging July 2

Phalaenopsis Flores Moon 'Crystal Star' HCC-AOS 79 points, Crystal Star Orchids

Promenaea Limelight 'Divine Wine' HCC-AOS 76 points, Mario & Conni Ferrusi

Promenaea Conni 'California Girl' AM-AOS 81 points Mario & Conni Ferrusi

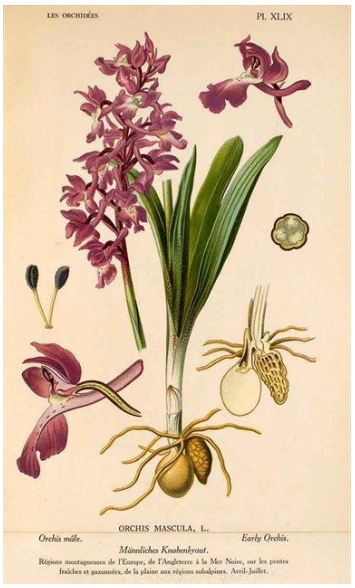
Promenaea Firefly 'Margaritaville' AM-AOS 80 points Mario & Conni Ferrusi

Oncidium divaricatum 'Wilson's Choice' CCE-AOS 90 points Wilson Ng

Zootrophion CCM-AOS Mario & Conni Ferrusi

Orchid Ramblings by Inge Poot

On June 5, 2011 our society was amused and informed by **Tom Miranda**'s great talk about the "**Mysteries of Orchid Pollination**", a talk that Tom jokingly dubbed "The Orchid Porno Show"!



Since seduction of insects is one of the many strategies orchids use to get cross-pollinated – prominent in the genus Orchis of Europe and since these orchids also have suggestive shapes to their over-wintering tubers the sexual connotation of their shape was immortalized in their common name of "orchis" which is Greek for "testicles"...And naturally a legend was invented to go along with this : when the seducer of a Greek priestess was ripped apart as punishment for his crime, where his testicles landed an orchid grew and presto we have *Orchis macula*. Brrr... But that was not the end of it. In the Middle Ages the doctrine of signatures was believed in and since the genus Orchis had testicle shaped tubers, God must have meant it to help with impotence problems. The placebo effect did the rest and is undoubtedly responsible for the fact that some people still believe in this supposed remedy. I wish they would stick to Viagra and leave our lovely beauties to grow undisturbed.

Orchids are probably the largest family in the Flowering Plants or Angiosperms and comprise about 10% of that group of plants. (Some taxonomists claim that the daisy family is a bit bigger, but our speaker felt that since the composites all look alike, they don't deserve to be recognized as the largest family!) According to Kew's Checklist of Orchids about 25,000 species have been described so far with new ones being described weekly. The highest diversity occurs in the rather poorly explored tropics, so the end is nowhere in sight. For example 100 to 550 have been described each year for the last ten years.

Why are orchids so diverse? First of all they had lots of time to develop diversity since according to recent evidence, they have been around for 9 to 10 million years –in other words about ten times as long as our own species and almost twice as long as the line of hominids that led to our species! They are found everywhere except at the two poles and that covers an enormous diversity of habitat. And since unlike animals the individual plants cannot move around to mix their genes, there is an enormous potential for genetic isolation due to geographic isolation and hence the plentiful evolution of different species.

The greatest diversity is found in the montane regions of the world, because the mountain ridges isolate the plant populations and allow diversification to take place. For instance in Ecuador Lou Jost found and described in two years 21 new species of Teagueia in 80 square miles around the Pastaza Valley! Every Mountain there acts as a genetic barrier resulting in rapid speciation.

Reproductive Isolation: How can sympatric (growing in the same habitat), inter-fertile species live together without hybridizing?

One solution is to have different insects pollinate them. This is the most common solution and accounts for the precise traps that these flowers represent. Precise pollen placement helps prevent waste of pollen as well as attraction of only one species of pollinator. Nectar guides help to lure the insect into the precise position needed to place the pollen precisely. Maybe you will now appreciate the lovely lines, dots and ridges on lips such as *Miltoniopsis phalaenopsis*, Cattleyas such as *C.(Laelia) purpurata*, *Schomburgkia* and *Chondorhycha amazonica*.

The *Sobralia* solution is rather neat. This genus likes disturbed road-sides. There can be five different species growing in the same area. Their flowering is triggered by a temperature drop. One species will open flowers 3 days after the temperature drop, another 5 days later, the next 7 days and so on. They usually use the same pollinator and tend to look somewhat similar –eg all those white sobralias that were considered to be the same species for quite a long time. Unfortunately this scheme is just made for errors, especially since it usually does involve the same pollinator and the results are hybrid swarms- the bane of taxonomists! Precise pollen placement would prevent hybridization and would be more reproductively successful.

A quick review of **orchid flower morphology** was inserted to make sure that even non-botanists understand the gist of the pollination strategies. The defining feature of orchids is that their male and female reproductive parts are fused into one structure called the column. The stamen that is in front of the dorsal sepal is the only functional stamen left in all orchids except for lady-slippers. In the latter, the two stamens in front of the two petals are the only functional stamens left, while the stamen that is in front of the dorsal sepal has been modified to form the shield-like staminode, covering the top of the column and the two stamens. Also, the three sepals and the three petals (–one of which is modified into the lip –)are fused to the ovary and only spread out above the ovary. The stigma has become a sticky depression on the underside of the column, while in all but the lady-slippers, the one functioning stamen is perched on top of the column and covered by the anther cap and separated from the stigmatic cavity by a partition-like structure called the rostellum.

To continue with reproductive strategies, many plants offer rewards to attract pollinators.

Pollination rewards:

-Nectar: to attract insects and birds

-Pollen –this does not apply to orchids, but they do produce pollen-like lures, such as the callus of some oncidiums. The real pollen is all in two to eight packets and cannot be spared. It is stuck onto the pollinator where it cannot be reached and in birds coloured to be the same colour as the bird part it is attached to- to prevent it from being noticed and brushed off.

-Floral fragrances –used to attract male euglossine bees that use it to mix a perfume to attract females.

-Plant resins used by bees for nest building.

-Oils used by anthophorid bees to feed their larvae.

Pollination syndromes:

By looking at the structure of flowers and the behaviour of various pollinators you can make a pretty good guess what the flower's pollinator could be.

Bird Pollination:

For example, red flowers are **bird pollinated**. Even a red shirt will attract a hummingbird!

Sunbirds and honey creepers take over the pollinating function in Papua New Guinea and Asia. Nectar rewards may be absent or present. This strategy is found in Neotropical and Paleotropical orchids such as *Dendrobium cuthbertsonii, Masdevallia rosea, Fernandezia subbifolia* and *Maxillaria sophronites*.

Using birds instead of insects as pollinators is an adaptation to higher altitudes where temperatures are too cold for cold-blooded insects to fly efficiently. A warm-blooded pollinator is needed there. *Masdevallia rosea* is an example. To not be brushed off by agile birds, the pollinia of such species tend to be dark to blend into the beak colour.

Hexisea bidendata is an example of an orchid adapted for pollination by low elevation hummers.

The South African *Disa chrysostachya* with dense upright inflorescences of gold and red flowers transfers its pollen to the feet of nectar sucking and thus pollinating sunbirds. Since the birds climb up the inflorescence sucking nectar their feet get full of pollinia and some of those pollinia will end up in another flower –probably not until after the pollinia stipes have started to dry and bend forward –ready to have the pollinia pushed into a flower stigmatic cavity of the next inflorescence visited.

Butterfly pollination:

Epidendrums are taxonomically confusing at the best of times, but unless the species are geographically isolated we get the even more confusing hybrid swarms. The reason for the hybridization is their pollination strategy. They mimic nectar rich milkweeds that are pollinated by butterflies. However they do not provide any rewards and so the fooled butterfly will quickly leave the "empty" orchid and look for a slightly different flower in the hope that it will be a nectar-producing milkweed. So hybridization resulting in all slightly different flowers aids in this deception and is therefore not selected against. To add insult to injury, the leaves of epidendrums are too tough for butterfly caterpillars to chew on and so these plants give the butterfly nothing in return. As a result this butterfly parasite flourishes, while taxonomists tear out their hair trying to put a name to this mishmash!!

Other butterfly pollinated orchids are *Comparettia macroplectrum* with large pink "Landing Platform" lips that sport dotted lines converging onto the opening to the long nectar spur. *Dendrobium ?bracteosum* is another butterfly pollinated species, but this time with a spur-like mentum.

Hawk moth pollination:

These flowers have to be as close to white as possible, so that they can be seen by this nocturnal pollinator. They will also be fragrant at night, again to be found by the moths. Examples are *Amesiella philippinensis, Angraecum rutenbergianum*.

A curious case is the New World species *Dendrophylax fawcettii* and the harder to grow Ghost or frog orchid, *Polyrrhiza lindenii*. They are both leafless orchids related to the Angraecums. Their forbears must have existed before the continents separated, again showing that orchids are an ancient family.

Another orchid with an interesting history is *Angraecum sesquipedale*. It has a foot-long spur and Darwin predicted that a hawk moth would be found with a foot-long spur that pollinates it. About a century later the hawk moth *Panthopan morganii* was described and linked to the *Angraecum* because of its foot-long tongue.

Another nocturnal pollinator is the tanglewing fly of South Africa. It pollinates the white Disa draconis and the picture showed the poor thing with a very long proboscis(=tongue)that was absolutely dripping with pollinia in its middle section!

Yet another type of nocturnal pollinator is represented by some species of bats. The flowers tend to be large. An example is *Rhyncholaelia digbyana*. This species mimics the flowers of a cactus (*Cereus* species) where the fringed lip mimics the plentiful long stamens hanging to one side of the *Cereus* flower and the many thin sepals framing the flower.

Nectar Deceit:

Many orchids seem to have nectaries but not all have any nectar to offer. For instance *Cochleanthes anatona* has the lateral sepals shaped like a nectary, but it contains nothing.

Pollen Deceit:

Orchids cannot afford to let their pollinators eat any of their pollen, but they have still evolved to use pollen collecting species of bees by attracting them to the flowers with fake pollen and then slapping the real pollen unto their backs where they cannot get at it. *Calopogon*

pulchellum , the bog orchid uses this trick. It has non-resupinate flowers with a long lip that sticks up and in whose triangular apex is a hairy hole. The bee thinks this hole is the pollen filled centre of the flower. When it lands on this hole, the weight of the bee makes the lip tip downward, slapping the bee's back against the real pollen found on the column.

Male Euglossine Bee Pollination:

There are about 250 different species of euglossine bees in the Neotropics. Only the females have stingers. The males have long tongues. Their habitat has become fragmented and the areas taken over by agriculture are planted with monoculture crops that need a lot spraying. The sprays have decimated these bees to such an extent that where formerly 30 species were collected in lures at a location, today will only show evidence of 3.

The males collect scents from flowers, store them in special pouches in their tibia (parts of the hind legs) and mix them. It is thought that the males with the most complex scents are favoured by the females.

Clowesia warscewiczii is pollinated by the euglossine bee *Eulaema meriana*, a black bee with a yellow and black striped abdomen about three times as long as the *Clowesia* flower.

Catasetum expansum has a shiny brown bump and depression near the base of its lip. A species of euglossine bee that looks just a bit chubbier than the one mentioned above, finds this callus absolutely irresistible, perhaps as a resting place. As he settles in, he is bound to touch the trigger that goes straight across the callus. As soon as he does so, the pollinia are slapped onto his back, giving him the scare of his life. As he dashes off, he just wants to find a hole to hide in. The female flowers look like burrows that even contain some nectar and he would dash in. Presto! Pollination!

Stanhopea costaricensis attracts with fragrance. It is covered by little spots which simulate small insects- competing with the bee for the fragrance. It will make the bee scramble and fall off on the slippery surfaces. If the bee is the right size it will pick up the pollinia as it falls past.

Other fall-through flowers are *Paphinia*s such as *P. neudeckeri* and *Gongoras* such as *G. tricolor. Gongoras* appear to produce the sex pheromes of the species they use as pollinators and attract the males with it. *Gongora tricolor* attracts *Euglossa cyanura*. A last example of a fall-through flower is the genus *Sievkingia*. This is a genus of plants that look like miniature Stanhopeas, but with simple lips.

Oil Reward/ Deceit flowers:

Some flowers produce oils, triacryl glycerides, on their surfaces, often in special glands called **elaiophores** and these oils are collected as food provisions for their larvae by anthophorid bees. Trust orchids not to let such a great pollination opportunity go to waste! Many orchid genera mimic these oil producing species but usually offer no oils themselves. The oil rich Malpighiaceae is a favourite target for this type of pollination parasitism by the Oncidium alliance. Examples are Cyrtochilum with elaiphores on the underside of the proximal lip margin, but *Cyrtochilum macranthum* only mimics the oil-producing *Malpighia* (*Malpighia* has 5 yellow petals with long claws and a wide blade) –as do many other Oncidium alliance species. Typical yellow/brown "Oncidinoid" flowers occur in many unrelated clades of the sub-tribe Oncidiinae.

Sigmatostalix has lip calluses that look like masses of elaiophores, ditto for Tolumneas. In the genus *Ornithocephalus* green blotches on the flower parts simulate elaiophores.

The genus *Calceolaria* relies on oil rewards to attract and reward pollinators. A yellow species of this genus (whose pouches make it look like a ladyslipper orchid), grows at the same higher elevations as *Otoglossum harlingii.* The latter species has the same outline as the oil producing non-orchid and is undoubtedly using the same pollinator but not rewarding it.

Wax or Resin reward flowers:

Collected and used by female bees for nest construction. It is found in some of the Maxillarias and Cymbidiums, but it has not been studied properly yet. *Maxillaria notylioglossa* has a V-shaped deposit of white wax on the blade of its red-brown lip. *Maxillaria proboscidea* has a channel of resin on its deep purple-black lip.

Resin Deceit?

Many Maxillaria species appear to produce resin, but the "resin" is simply a shiny callus on the lip.

Sexual deception:

Many genera of Australian orchids and the European genus *Ophrys* produce flowers that

look like the female of the pollinating species. Young inexperienced males will attempt to mate with them and so effect pollination. It is obvious that the simulation does not have to be perfect, just enough to trigger the male pseudo-copulation response! This point was illustrated with a cute cartoon of two snails ogling a tape dispenser!

In the Australian orchids the species *Chiloglottis formicifera* seems to have an ant on its lip, while *Chalochilus palidosa* has a shaggy red-brown lip probably simulating a hairy bug. Some species have the whole lip lifted up and looking like a hovering bug, just waiting to be grabbed by an amorous male of the species!

Sexual deceit of Tachinid flies:

This twist on the previous theme was introduced by the cutest picture of a side-view of a Telipogon species that looked like a flying bird with a Mohawk hair-do and a chatty wide-open "beak". The whole genus seduces the males of various species tachinid flies and gets pollinated that way.

Fungus gnats and Fruit-fly Sexual deception:

The genus *Lepanthes* consists of tiny sirens seducing gnats and fruit flies! *Lepanthes glicensteinii* had been caught red-handed-footed? In the act by our speaker.

Pseudo-antagonism or Pseudo-trespassing:

Some yellow oncidiums with large sprays of flowers seem to simulate a swarm of insects that are perceived as trespassing aggressively in the territory of the pollinator. The defending bee will hurl him-or herself at the "invading" flowers and in the struggle pollinate the flowers. A good example is *Oncidium varicosum* with its branched inflorescence of yellow, large -lipped flowers.

What is it?

Tolumnea henekenii does a great imitation of a fuzzy, yellow moth with mostly brown wings and it probably tricks its pollinator either with pseudo-copulation or pseudo-tres-passing

Chrysocycnis schlimmii seems to have an ant on its lip and the column is very close to this "ant". Again both scenarios would work.

A South American species of *Cyrtidiorchis* has a lip that looks like a brown moth that bares its abdomen shamelessly! We can guess at the pollination method!

Mormolyca ringens has a lip with pseudo-resin glands and right near the base of the lip it becomes a string of lumps so that this callus looks like an ant. Pseudo-trespassing for food is probably the pollination strategy. However some young ant or wasp Lothario could be fooled into thinking he is surprising a damsel collecting provisions for her nest.

Mormolyca schweinfurthiana has pale pink-brown flowers and a lip of the same colour that looks like a resting moth. Either pseudo-copulation or pseudo-trespassing is probably at play here.

Food or brood site deception:

Some *Draculas* have lips that look like mushrooms. Fungus gnats mistake them for great egg-laying sites –food for their larvae. Others have lips that look like yeast and *Drosophilid* flies pollinate them while looking for egg-laying sites of rotting fruit.

Cypripediums, Selenipediums and *Paphiopedilums* have pouches that are investigated by bees looking for brood sites or shelter for the night. They fall in because of the slippery surfaces and are forced to crawl out past the stigmatic surface and then the pollinia. If they are the right size they will pick up the pollinia and at the next pseudo-nest/shelter site will pollinate the flower.

Other slipper orchid species have spots on them that may be mistaken for aphids by the pollinating syrphid flies that are looking for aphids to lay their eggs in. Gruesome!!

The twisted petals of many slipper orchids are thought to glint in the play of sun and wind and so attract attention.

Some Himalayan Cypripedium species may simulate rotting fruit. *Cypripedium bardolphianum, franchetii, lichiangense, margaritaceum* and *tibeticum* are some examples. They all have rounded pouches with the petals clasping the pouch like left-over skin, all in suggestive colours and of course some with fake fruit-flies in attendance –in the form of spots that are denser near the jagged hole to the interior of the "rotten fruit/pouch"

Many *Bulbophyllums* and *Cirrhopetalum*s emit the dreadful stench of rotting meat and are pollinated by various carrion flies. Their lips often look like a piece of rotten meat with *Bulbophyllum phalaenopsis* topping them all with

a whole inflorescence of bits of fake “fur” and a stench to match it. Quite a conversation piece!

Spider mimicry is another orchid trick. It attracts wasps that prey on spiders. Of course these wasps themselves may fall prey to real spiders that hide in the fake ”spiders” of flowers such as *Brassias* and eat the would –be parasite/pollinator.

Motel “6” Syndrome:

Bees seek out flowers to sleep in overnight.

There are no obvious food rewards.

Some seem to have chemical attractants, but this is not well studied.

It is confirmed for the European genus *Serapias*. The species *Serapias lingua* has several densely spaced rose-pink flowers on a short stalk and the flowers form roomy dark tubes with an inviting landing platform in front. When the bees shelter in these caves, the fragrance dopes them and in their fumbling and slow exit the next morning, they have picked up a set of pollinia and hopefully deposited the previous night’s pollinia as well.

Trap Mechanism:

Such traps are found in association with various reward/ attractant syndromes.

The pollinators are lured into an area they cannot easily escape from and can only do so by squeezing past the column.

Or the pollinator may be forcibly thrown against the column.

When a bee lands on the red-rimmed toilet bowl-shaped pouch of *Selenipedium antioquiense* it slips off into the bowl bottom. There the down-turned edges of the pouch rim won’t allow it to crawl out anywhere but at the back edge where it has to crawl past the column to get out.

Porroglossum eduardii is an example of an active trap mechanism. The pale brick flowers show an inviting hole in the centre but the spring-loaded lip hugs the bottom. When the insect tries to enter the cavity the lip recoils upward throwing the insect against the column. The hole holds the insect prisoner for some time before the bee figures out how to get out.

Coryanthes has the cruellest trap flower! It has a fragrance attractant which tempts bees to land on the rim of the bucket. The bucket is filled by a steady drip from a column extension and drains through a hole at whose top is the column tip. Any insect falling in has to swim for it and the only exit not protected by slippery sides is the hole with the column. Any insect that is too big to get through, drowns. Any that is too small to rub against the top of the hole/ie the column, escapes unscathed. The right sized bee will exit with the pollen masses and hopefully try to collect the fragrance again!

Nectar Deceit:

Cochleanthes flowers have fake nectar tubes made from folded lateral sepals.

Termite Pollination?:

Rhizantella gardneri is the orchid’s answer to composite flowers! The flower has pink “petals” –probably modified floral bracts- surrounding a rachis modified to be a flat round base- and on it lots of fairly tightly packed little complete red-black flowers. Like a daisy in pink and red-black! The theory is that this orchid is termite pollinated.

Well-known Orchids whose Pollination mechanism is not known:

Psychopsis –its striking flowers may be a look-alikes of some female insect and the males may be attempting pseudo-copulation or it may be perceived as a competitor and result in a pseudo-antagonistic attack to drive it away and pollination.

Arpophyllum with tightly packed inflorescences of lavender Cattleya miniatures may be butterfly pollinated.

Working with *Platanthera (*Fringed Orchids) Hapeman and Inoue mapped DNA of these plants and then produced a phylogenetic tree that had nothing to do with floral characteristics. It is getting ever clearer that pollination related floral characteristics (colour, size, spur length etc.) are not good predictors of genetic relationships. Flower morphology changes rapidly and frequently to adapt to changes in pollination opportunities. For instance *Oncidium phymatochilum,* according to its DNA should be a *Miltonia*! Another large error was made by classifying *Dendrophylax filiformis* as a *Campylocentrum,* since it sure looks nothing like its close relative *Dendrophylax fawcetti*. However the evolution of floral characters can be traced by following the change in the

characters by following them on the genetic family tree.

On the question if the orchids and their pollinators might have evolved together? It does not seem likely. It is far more likely that orchids when given half a chance will parasitize existing pollination partnerships.

Show Table Comments:

The *Laelia purpurata* brought to the show table elicited the comment that this species has just gone through two name changes –first to *Sophronites* then thankfully to ***Cattleya***. The owner grows it in a slat basket with very little medium.

Mario Ferrusi brought in a beautifully grown and prolifically flowered ***Oncidium crispum* 'Phillip Rhys David'**. Since I cannot grow this species I privately questioned him at length on its culture. He said that he discovered that this species scrambles along the ground in its natural habitat. He therefore lined a large basket with sheet moss and planted it into 2-3cm of medium made up of 6 inch pieces of New Zealand sphagnum moss and Styrofoam beads. Do not use Perlite instead of Styrofoam beads, because the latter is not water-retentive, while the Perlite is. Keep moist. He hangs it high up in the greenhouse.

PLANT OF THE MONTH

John Spears with Oncidium baueri. Tom Miranda at left. Photo PP

The plant chosen was John Spears' magnificent *Oncidium baueri* 'Ellen'. He grows it on an East-facing windowsill in his South-facing solarium. The plant gets sun in the morning, but later a curtain is drawn over the top to reduce heat. The night temperature drops 10-15 degrees Celsius below the house temperature during the night, by closing the door to the house.

All the plants sit in humidity trays filled with pea gravel and water. The Oncidium is potted in coarse bark, is misted every morning and watered once a week with water to which a pinch of fertilizer per 5 gallon pail of water is added. The pot sits in a one inch (2.5cm) deep saucer and therefore has wet feet for a day or two after watering.

Congratulations on a wonderful job done on a superior plant!

June 2011 Show Table

Class	First	Second	Third
Class 1 Cattleya Alliance	Rhyncholaeliocattleya (Potinara) King's Ransom *John Vermeer*	*Cattleya aclandiae* *Calvin Wong*	Cattlianthe (Sophrolaeliocattleya) Chyong Guu Online 'Wilson-611' *John Vermeer*
Class 2 Paphiopedilum	Phragmipedium Penns Creek Cascade *Marion Curry*	Phragmipedium Tall Tails *Doug and Terry Kennedy*	Phragmipedium Eugene Conroy 'Twisted Tower' *Henry Glowka*
Class 3 Phalaenopsis and Vanda Alliance	*Sobennikoffia robusta* *Erika Lorincz*	*Neofinetia falcata* 'Hisui' *Calvin Wong*	
Class 4 Oncidium	***Oncidium baueri*** ***John Spears***	Tolumnia Genting Angel *Henry Glowka*	Brassada Orange Delight 'Hilo Sunrise' *Linda Gough*
Class 5 Cymbidium		*Cymbidium pumilum* *Chee Chong*	
Class 6 Dendrobium	*Dendrobium antennatum* *Calvin Wong*		*Dendrobium strebloceras* *Michael Hwang*
Class 7 All Others	Coelogyne Burfordiense *Calvin Wong*	*Maxillaria weberbaueri* 'Yellow Birds' CHM/AOS *Doug and Terry Kennedy*	*Bulbophyllum nymphopolitanum* *Calvin Wong*
Class 9 Baskets or Displays		Neofinetias *Terry Kowalczuk and Michael Wong*	